

LISTING OF THE CLAIMS

1 (WITHDRAWN): A probe carrier having immobilized thereto a probe that is specifically bindable to a target substance, the probe being immobilized to the carrier through the following substances:

- a) a linker bound to the probe;
- b) a first functional group bound to the linker; and
- c) a second functional group bound to the first functional group,

wherein a combination of the first functional group and the second functional group comprises an acidic functional group and a basic functional group.

2 (WITHDRAWN): The probe carrier according to claim 1, wherein the combination of the first functional group and the second functional group comprises an acidic functional group having a dissociation constant of 1.0×10^{-12} or more and a basic functional group having a dissociation constant of 1.0×10^6 or more.

3 (WITHDRAWN): The probe carrier according to claim 1, wherein the probe comprises an oligonucleotide or a nucleic acid.

4 (WITHDRAWN): The probe carrier according to claim 3, wherein the oligonucleotide or the nucleic acid has the linker at a 3'-terminal or a 5'-terminal thereof.

5 (WITHDRAWN): The probe carrier according to claim 1, wherein the linker comprises a methylene chain or a polyether chain.

6 (WITHDRAWN): The probe carrier according to claim 1, wherein the acidic functional group is a mercapto group and the basic functional group is an amino group.

7 (WITHDRAWN): The probe carrier according to claim 1, wherein the basic functional group is one selected from the group consisting of a primary amino group, a secondary amino group, and a mixture thereof.

8 (WITHDRAWN): The probe carrier according to claim 1, wherein the probe has a second functional group introduced by treatment of the solid phase carrier with a silane coupling agent.

9 (WITHDRAWN): The probe carrier according to claim 8, wherein the solid phase carrier is one selected from the group consisting of glass, quarts, silica, and a mixture thereof.

10 (WITHDRAWN): The probe carrier according to claim 1, wherein the combination of the first functional group and the second functional group is a combination that causes shift of mutual chemical shifts of signals in the NMR spectrum by binding each other.

11 (WITHDRAWN): A detection method comprising the steps of:

imparting an analyte containing a substance to be detected to a probe carrier according to claim 1; and

detecting the substance to be detected in the analyte bound to the probe carrier.

12 (WITHDRAWN): A detection apparatus using a detection method according to claim 11.

13 (WITHDRAWN): An apparatus for producing a probe carrier according to claim 1.

14 (CURRENTLY AMENDED): A method of immobilizing a probe that is specifically bindable to a target substance to a solid phase carrier, comprising the steps of:

providing a probe having a linker containing a first functional group;

providing an immobilization substrate having a second functional group;

imparting the probe to the immobilization substrate; and

binding the first functional group of the probe and the second functional group of the immobilization substrate to each other,

wherein a combination of the first functional group and the second functional group comprises an acidic functional group and a basic functional group, and wherein the first functional group and the second functional group are in the state of coupling without covalently bonding,

wherein the first functional group is a mercapt group, the second function group is an amino group, the probe is a nucleic acid and the mercapt group and the amino group are directly bonded through ionic bond.

15 (ORIGINAL): The method of immobilizing a probe according to claim 14, wherein the combination of the first functional group and the second functional group comprises an acidic functional group having a dissociation constant of 1.0×10^{-12} or more and a basic functional group having a dissociation constant of 1.0×10^{-6} or more.

16 (ORIGINAL): The method of immobilizing a probe according to claim 14, wherein the probe comprises an oligonucleotide or a nucleic acid.

17 (ORIGINAL): The method of immobilizing a probe according to claim 16, wherein the oligonucleotide or the nucleic acid has the linker at a 3'-terminal or a 5'-terminal thereof.

18 (ORIGINAL): The method of immobilizing a probe according to claim 14, wherein the linker comprises a methylene chain or a polyether chain.

19 (ORIGINAL): The method of immobilizing a probe according to claim 14, wherein the acidic functional group is a mercapto group and the basic functional group is an amino group.

20 (ORIGINAL): The method of immobilizing a probe according to claim 14, wherein the basic functional group is one selected from the group consisting of a primary amino group, a secondary amino group, and a mixture thereof.

21 (PREVIOUSLY PRESENTED): The method of immobilizing a probe according to claim 14, wherein the second functional group is introduced by treatment of the solid phase carrier with a silane coupling agent.

22 (ORIGINAL): The method of immobilizing a probe according to claim 21, wherein the solid phase carrier comprises one selected from the group consisting of glass, quarts, silica, and a mixture thereof.

23 (PREVIOUSLY PRESENTED): The method of immobilizing a probe according to claim 14, wherein the combination of the first functional group and the second functional group is a combination that causes shift of mutual chemical shifts of signals in the NMR spectrum by binding each other.

24 (CURRENTLY AMENDED): A method of immobilizing a plurality of probes that are specifically bindable to a target substance to a solid phase carrier, comprising the steps of:
providing a plurality of probes each having a linker containing a first functional group;
providing an immobilization substrate having a plurality of second functional groups;
imparting the probes to the immobilization substrate; and

binding the first functional groups of the probes and the second functional groups of the immobilization substrate to each other,

wherein a combination of the first functional group and the second functional group comprises an acidic functional group and a basic functional group, and wherein each bond of the first functional group and the second functional group is in the state of coupling without covalently bonding, and

wherein the first functional group is a mercapt group, the second function group is an amino group, each of the probes is a nucleic acid and the mercapt group and the amino group are directly bonded through ionic bond.